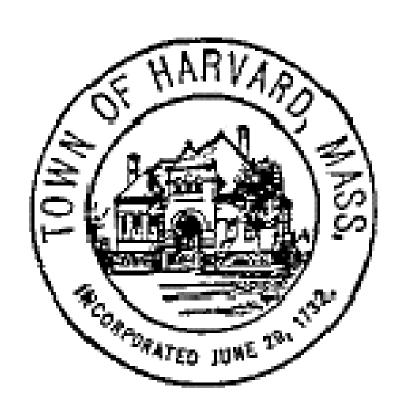
ERV REPLACEMENT

BROMFIELD HIGH SCHOOL 14 MASSACHUSETTS AVENUE HARVARD, MASSACHUSETTS 01451



HARVARD PUBLIC SCHOOLS 14 MASSACHUSETTS AVENUE HARVARD, MASSACHUSETTS 01451

DRAWING LIST:

Title Sheet

Mechanical Legend, Notes, & Abbreviations

Mechanical Schedules, Controls, and Details

H1.0 Mechanical Roof Demolition Plan **Mechanical Roof New Work Plan**

Electrical Notes & Legend

Electrical First Floor Demolition Plan Electrical First Floor New Work Plan



Harvard Public Schools

Submission:

CD SET

ERV Replacement at Bromfield High School

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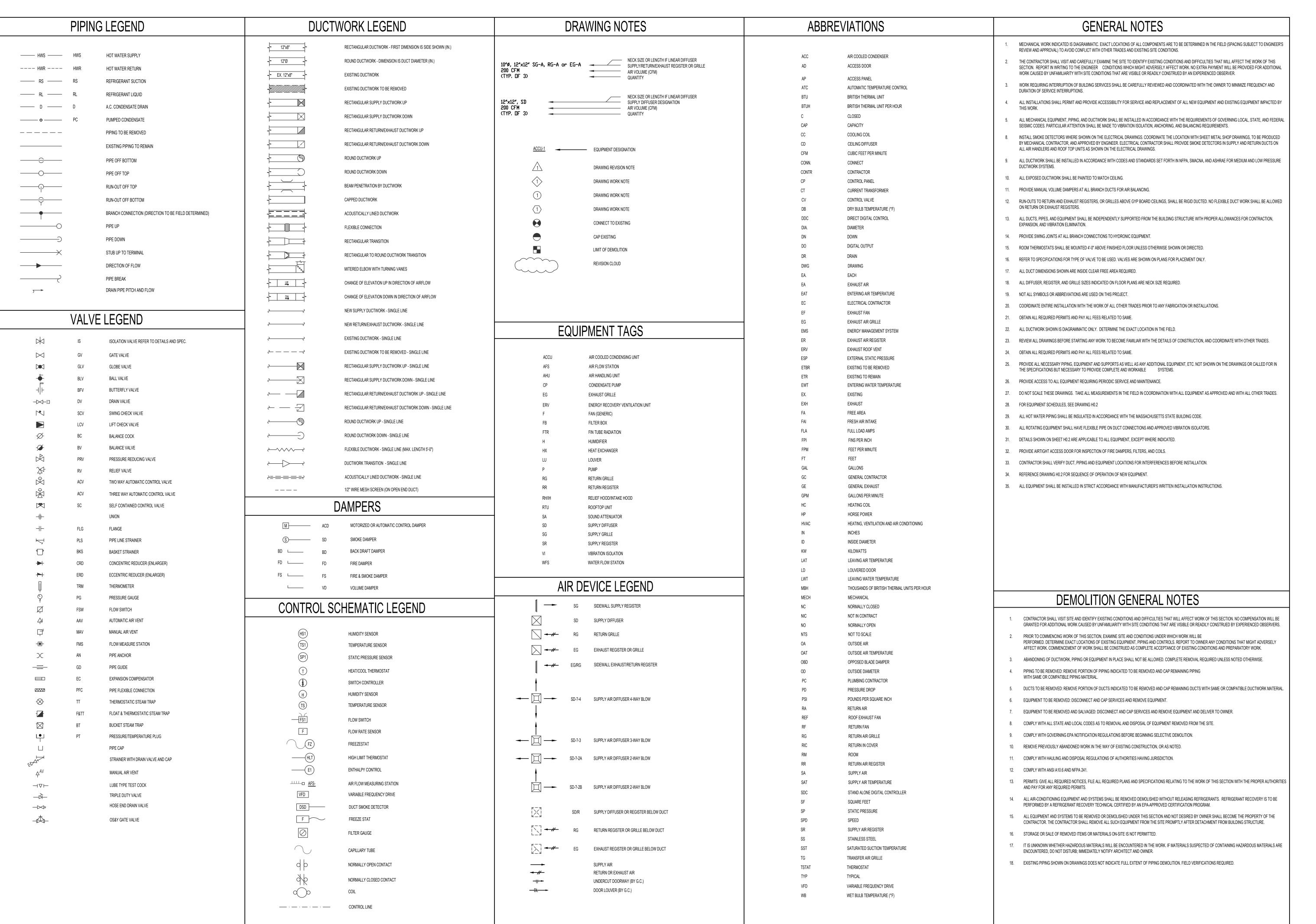
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HVAC * ELECTRICAL * PLUMBING * FIRE PROTECTION

Client:

Harvard Public Schools
14 Mass Ave.
Harvard, MA 01451

07/23/21

Submission:

CD SET

Revision:

| Project:

ERV Replacement at Bromfield High School

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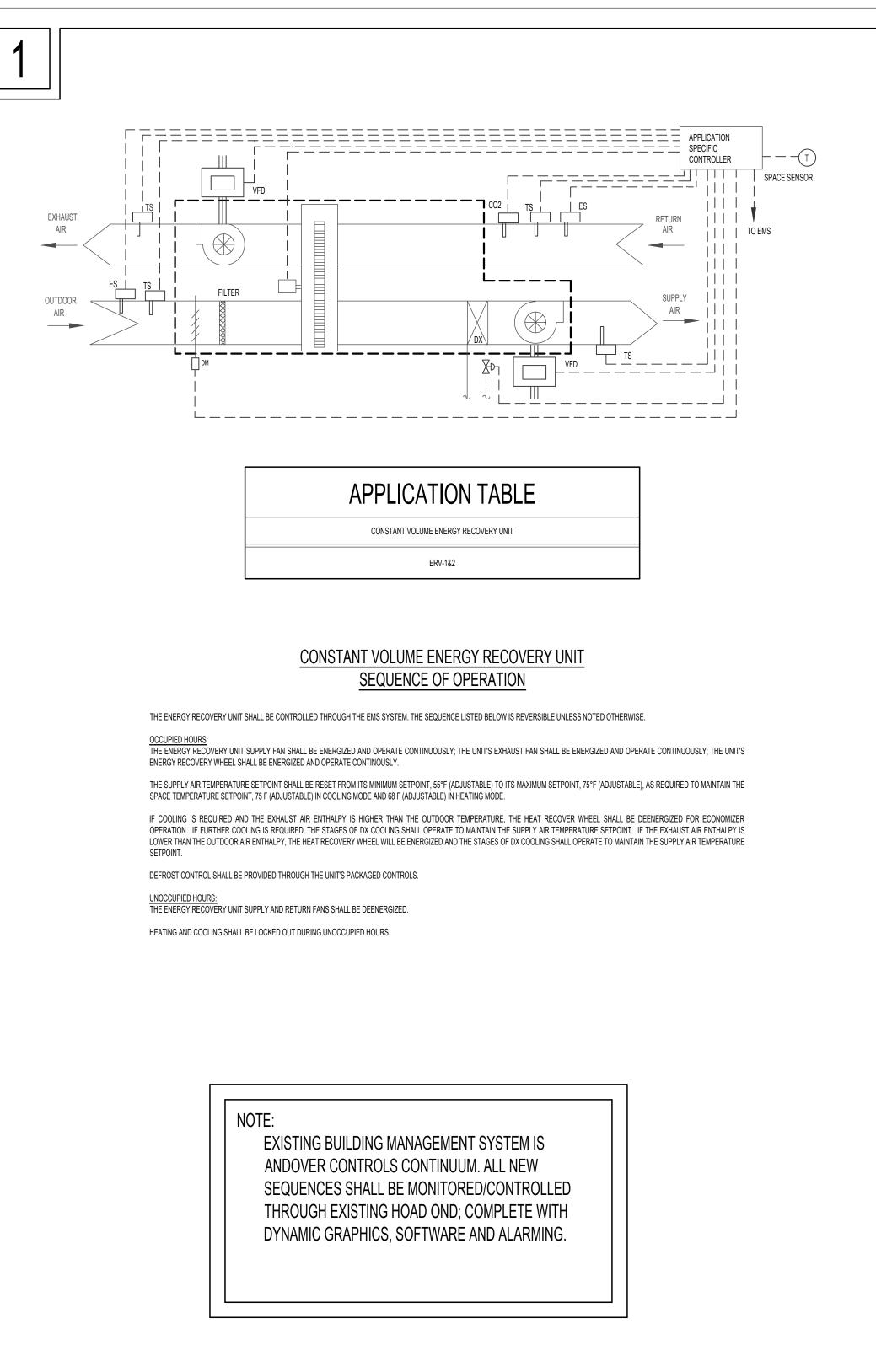
LEGEND,
NOTES, AND
ABBREVIATIONS
Drawing No.:

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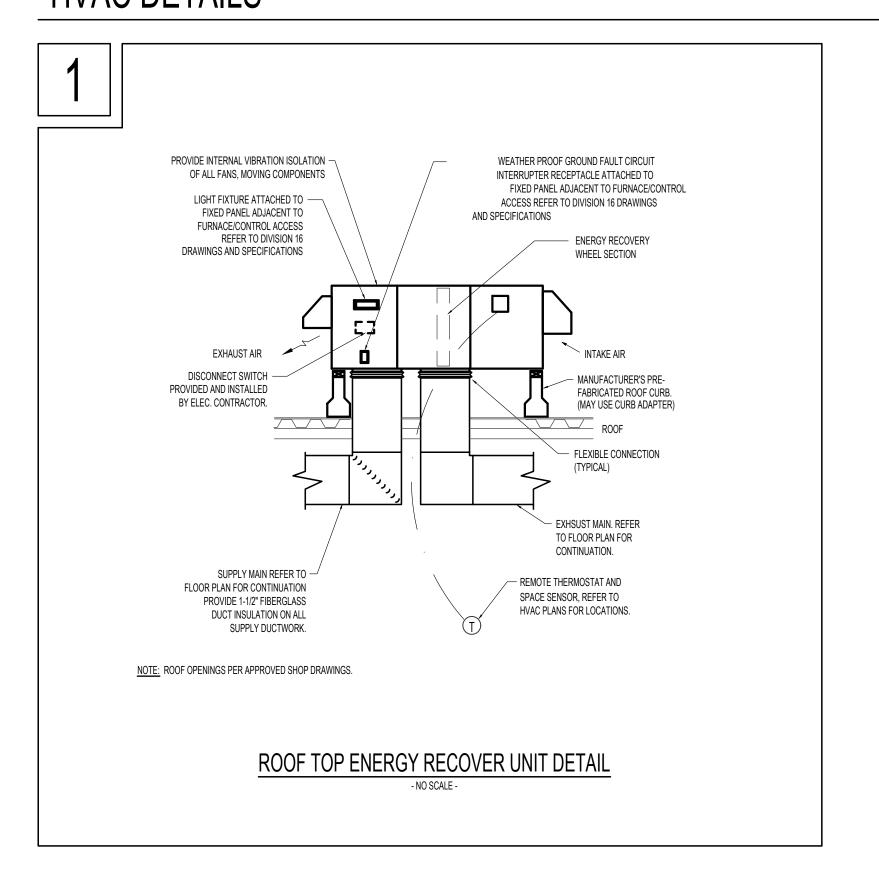
HVAC SCHEDULES

																HE	EAT REC	OVER'	Y UNIT S	CHED	ULE															
	LOCATION	MANIJEACTIJDED	MODEL NO	SU	JPPLY FAN DATA			EXHAUST FAN DA				S	WINT UPPLY AIR	ER PERFORMA	ANCE EXHAUST AIR	ENERGY RECOV	ERY SECTION		SUM PLY AIR	MER PERFO	RMANCE	EXHAUST AIF	R			DX COOLING CO	IL DATA		FILTERS/		ELECTRI	CAL DATA				REMARKS
TAG No.	LOCATION SERVED	MANUFACTURER (AS STANDARD)	MODEL NO. (AS STANDARD)	CFM (OA)	ESP (IN W.C.)	RPM I	HP CFM (EA)	ESP (IN W.C.)	RPM	HP	TYPE	CFM	EAT DB(F)	LAT C	CFM D	EAT MBH B(F) RCVD	CFM	DB(F)	EAT WB(F)	DB(F)	WB(F)	FM DB(F)	EAT WB(F)	MBH RCVD	MBH(TOT)	MBH(SENS)	EAT °F	LAT °F	TYPE	VOLTS	PHASE	HZ	MCA	MOP	WEIGHT (LBS)	T.C.II. a. a.
ERV-1	SEE PLANS	GREENHECK	ERCH-45-15H -12P-01	4050	1.0"	1644	5 4050	1.0"	1393	5	WHEEL	4050	7.4	52.2 40	050 7	2.0 196.0	4050	90.8	76.2	79.4	67.5 409	50 75	62	140.2	164.4	108.6	79.4/67.5	55.0/54.5	MERV 8/13	460	3	60	45.6	50.0	2815	PROVIDE WITH MODULATING WHEEL FROST CONTROL, MERV 8 FILTERS (OA&EA), MERV 13 FILTER (OA), WEATHERHOODS, ROOF CURB ADAPTER, MOTORIZED LOW LEAKAGE SUPPLY DAMPERS, MICROPROCESSOR CONTROLS, OA TEMP SETPOINT WHEEL MODULATION, MODULATING FAN WITH FACTORY MOUNTED AND WIRED VFDS, DIRTY FILTER SENSOR (0A&EA), CONDENSATE DRAIN TRAP, SERVICE RECEPTACLE, AND INTEGRAL DX COOLING W/DIGITAL SCROLL COMPRESSOR
ERV-2	SEE PLANS	GREENHECK	ERCH-45-15H -12P-01	3140	1.0"	1410	3 3140	1.0"	1209	3	WHEEL	3140	7.4	55.3 31	140 7	2.0 162.4	3140	90.8	76.2	78.7	66.9 31	40 75	62	116.1	125.7	84.5	78.7/66.9	54.2/53.9	MERV 8/13	460	3	60	32.7	40.0	2730	PROVIDE WITH MODULATING WHEEL FROST CONTROL, MERV 8 FILTERS (OA&EA), MERV 13 FILTER (OA) WEATHERHOODS, ROOF CURB ADAPTER, MOTORIZED LOW LEAKAGE SUPPLY DAMPERS, MICROPROCESSOR CONTROLS, OA TEMP SETPOINT WHEEL MODULATION, MODULATING FAN WITH FACTORY MOUNTED AND WIRED VFDS, DIRTY FILTER SENSOR (0A&EA), CONDENSATE DRAIN TRAP, SERVICE RECEPTACLE, AND INTEGRAL DX COOLING W/DIGITAL SCROLL COMPRESSOR

HVAC AUTOMATIC CONTROLS I



HVAC DETAILS



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HVAC * ELECTRICAL * PLUMBING * FIRE PROTECTION

Client:

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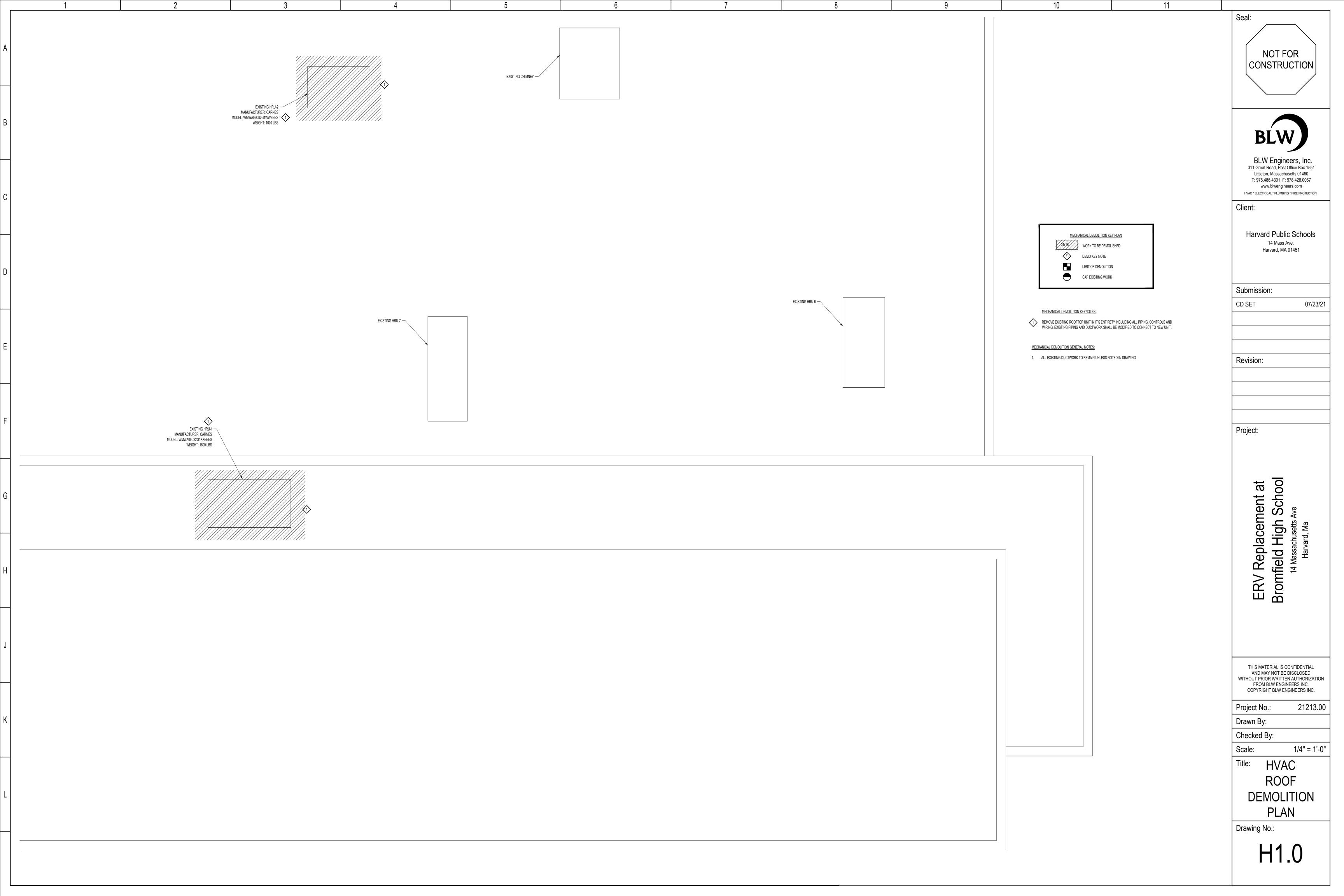
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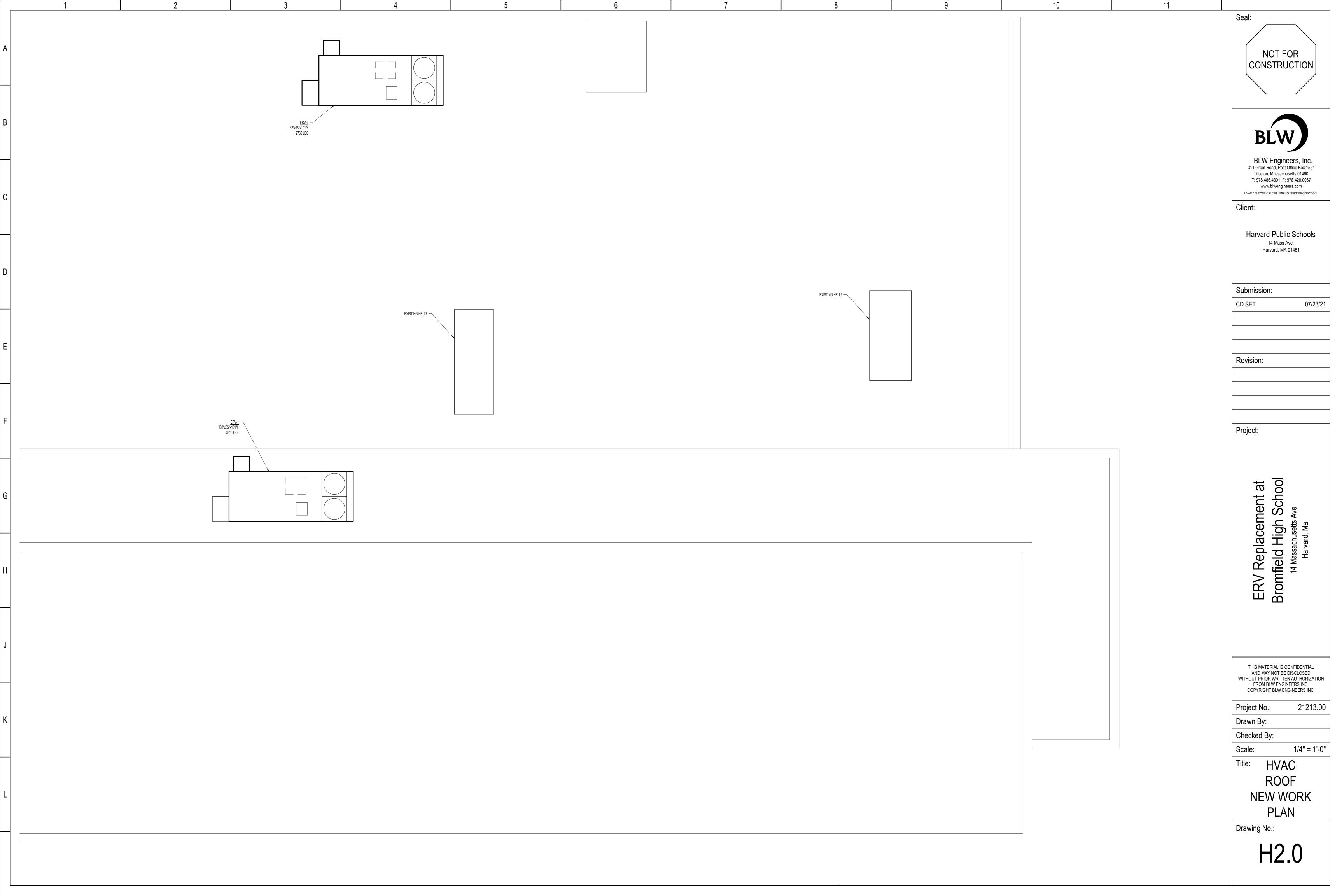
Title: HVAC

SCHEDULES, CONTROLS, AND DETAILS

Drawing No.:

H0.2





ABBREVIATIONS GENERAL SPECIFICATIONS CONDITIONS OF THE CONTRACT AND DIVISION 1, GENERAL REQUIREMENTS APPLY TO WORK SHOWN ON THESE DRAWINGS. EXAMINE DRAWINGS AND OTHER ALTERNATING CURRENT SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK SHOWN ON THESE DRAWINGS. AMPERE FRAME ABOVE FINISHED FLOOR 2. PROVIDE ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS IN QUANTITIES NECESSARY TO COMPLETE WORK. ABOVE FINISHED GRADE AMPERE INTERRUPTING CAPACITY 3. VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED. REPORT ADVERSE CONDITIONS IN WRITING TO ARCHITECT. COMMENCEMENT OF AI UMINUM WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS INCLUDING PREPARATORY WORK DONE BY OTHERS. AMPERE TRIP AUTOMATIC TRANSFER SWITCH 4. PERFORM WORK AND PROVIDE MATERIALS AND EQUIPMENT AS SHOWN ON DRAWINGS. COORDINATE ELECTRICAL WORK WITH WORK SHOWN ON THESE DRAWINGS. AMERICAN WIRE GAUGE CONDUIT 5. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE CIRCUIT CIRCUIT BREAKER COPPER 6. PERFORM WORK AS REQUIRED BY CODES, REGULATIONS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES WITH LAWFUL CENTERI INF DIRECT CURRENT DUAL ELEMENT MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE. MATERIAL AND INSTALLATION SHALL MEET DRAWING REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE. ELECTRICAL CONTRACTOR ELECTRICAL MANHOLE MAINTAIN RECORD DRAWINGS ON SITE. RECORD SET MUST BE COMPLETE, CURRENT AND AVAILABLE FOR INSPECTION WHEN REQUISITIONS FOR PAYMENT ARE ELECTRIC WATER COOLER ELECTRIC METALLIC CONDUIT FLEXIBLE LIQUID TIGHT METALLIC TUBING D. GUARANTEE WORK IN WRITING FOR ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO GENERAL CONTRACTOR OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER. GROUND GROUND FAULT CIRCUIT BREAKER 10. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERPRETED TO LIMIT OWNER'S RIGHTS GROUND FAULT INTERRUPTING UNDER LAW AND THIS CONTRACT. HEATING, VENTILATION AND AIR CONDITIONING 11. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. PROVIDE INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS BUT HORSEPOWER NOT SHOWN ON PLANS. AND VICE VERSA. AS IF EXPRESSLY REQUIRED ON BOTH. 12. UTILIZE MOLDED CASE CIRCUIT BREAKERS. MINIMUM INTERRUPTING CAPACITY SHALL BE EQUAL TO OR GREATER THAN THAT OF THE EXISTING SWITCHBOARD BRANCH CIRCUIT AND FEEDER SYMBOLS 13. TEMPORARY LIGHT AND POWER SHALL BE PROVIDED ON SITE BY THE ELECTRICAL CONTRACTOR, COST OF ELECTRICITY SHALL BE THE RESPONSIBILITY OF THE BRANCH CIRCUIT OR FEEDER CONCEALED UNLESS OTHERWISE NOTED. BRANCH CIRCUIT DIAGONAL LINES INDICATE NUMBER OF CONDUCTORS, GROUND GENERAL CONTRACTOR. WIRE(S) NOT INDICATED. MINIMUM SIZE CONDUCTOR #12 AWG AND 3/4" CONDUIT, UNLESS OTHERWISE NOTED 14. ADDRESS QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECT INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL. INDICATES (3) #1 AWG(PHASE), (1)#1 AWG(NEUTRAL), (1) #6 GROUND IN A 1-1/2" CONDUIT 15. SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN THIRTY (30) DAYS AFTER AWARD OF CONTRACT. CHECK, STAMP AND MARK WITH PROJECT NAMES SUBMITTALS BEFORE TRANSMITTING TO ARCHITECT. INDICATE DEVIATIONS FROM CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL EQUIPMENT SHOWN ON FLEXIBLE CONNECTION TO MOTOR OR EQUIPMENT THE DRAWINGS. PROVIDE SHOP DRAWINGS ON LIGHTING, PANELBOARDS, CIRCUIT BREAKERS, CONDUIT, WIRING DEVICES, LIGHTING CONTROL DEVICES, CABLE AND CONDUCTORS, FIRE ALARM INCLUDING BATTERY CALCULATIONS, RISER DIAGRAM, EQUIPMENT CUTS AND DISCONNECTS. HOMERUN TO PANELBOARD 'P1' CIRCUIT NUMBER 1. DIAGONAL LINES INDICATE (1) PHASE AND (1) NEUTRAL CONDUCTOR. (1) GROUNDING CONDUCTOR 16. DEVIATION FROM CONTRACT DOCUMENTS. OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED. SHALL BE REQUESTED IN SEPARATE LETTER, WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE, OR OTHER CAUSE. 17. SUBSTITUTIONS FOR SCHEDULED LIGHTING EQUIPMENT WILL BE REJECTED UNLESS SUBSTITUTION SUBMITTAL IS RECEIVED WITHIN TEN (10) DAYS AFTER CONTRACT HOMERUN TO PANELBOARD 'P1' CIRCUIT NUMBER 1 & 3. DIAGONAL LINES INDICATE (2) PHASE AND (2) NEUTRAL CONDUCTOR. (2) GROUNDING CONDUCTOR (2)20A/1P UNDERSTOOD. 18. SCHEDULE AT LEAST TEN (10) WORKING DAYS, EXCLUSIVE ON TRANSMITTAL TIME FOR SUBMITTAL REVIEW. HOMERUN TO PANELBOARD 'P1' CIRCUIT NUMBER 1, 3 & 5. DIAGONAL LINES INDICATE (3) PHASE AND (3) NEUTRAL CONDUCTOR. (3) GROUNDING 19. ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE. CONDUCTOR UNDERSTOOD. 20. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE. HOMERUN TO PANELBOARD 'P1' CIRCUIT NUMBER 1, 3 & 5. DIAGONAL LINES INDICATE (3) PHASE AND (1) NEUTRAL CONDUCTOR. (1) GROUNDING 21. LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS. CONDUCTOR UNDERSTOOD. 22. ALL RACEWAY RUNNING THROUGH BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS. HOMERUN TO PANELBOARD 'P1' CIRCUIT NUMBER 1, 3 & 5. DIAGONAL LINES INDICATE (3) PHASE CONDUCTORS. NEUTRAL CONDUCTOR NOT 23. CONDUIT HOMERUNS SHOWN ON THE DRAWING WITH MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMMATICALLY. THE CONTRACTOR REQUIRED. (1) GROUNDING CONDUCTOR UNDERSTOOD SHALL NOT INSTALL MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS IN A RACEWAY UNLESS DONE SO STRICTLY BY THE NATIONAL ELECTRICAL CODE AS AMENDED BY THE STATE. 24. THE ELECTRICAL CONTRACTOR SHALL CONSULT AND COOPERATE WITH CONTRACTORS OF OTHER TRADES TO AVOID ANY INTERFERENCE IN THE INSTALLATION OF THEIR RESPECTIVE EQUIPMENT. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT 25. BRANCH CIRCUIT WIRING MAY NOT BE SHOWN GRAPHICALLY ON DRAWINGS AND MAY BE INDICATED BY CIRCUIT NUMBERS BESIDE FIXTURES, DEVICES AND EQUIPMENT. PROVIDE COMPLETE WIRING SYSTEM WHETHER OR NOT INDICATED GRAPHICALLY. PHASE BALANCE ALL PANELBOARDS IN FIELD. CIRCUIT NUMBERS ARE DIAGRAMMATIC. UTILIZE AVAILABLE SPACE OR PROVIDE ADDITIONAL BREAKERS AND PANELBOARDS AS NECESSARY. 26. ALL NEW WIRING SHALL BE TYPE THHN/THWN RATED 75-90°C, 600V. WET-DRY LOCATIONS. MINIMUM BRANCH CIRCUIT WIRING SHALL BE NO. 12 AWG SOLID COPPER. BRANCH CIRCUITS LONGER THAN 150 FEET FOR 120 VOLTS OR 250 FEET FOR 277 VOLTS SHALL BE AT LEAST NO. 10 AWG FROM PANEL TO LAST OUTLET. 27. ALL NEW EXPOSED INTERIOR WIRING ABOVE 8'-0" NOT EXPOSED TO DAMAGE SHALL BE INSTALLED IN ELECTRIC METALLIC TUBING. ALL WIRING IN CONCRETE SLABS OR EXPOSED IN ROOM BELOW 8'-0" OR EXPOSED TO DAMAGE SHALL BE INSTALLED IN RIGID STEEL CONDUIT. EXTERIOR WIRING SHALL BE IN GALVANIZED RIGID 28. INTERRUPTIONS TO EXISTING ELECTRIC SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE ARCHITECT OR OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS, TWENTY-FOUR (24) HOUR NOTICE IS REQUIRED. 29. ALL GROUNDING SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AS AMENDED BY THE STATE OF MASSACHUSETTS. 30. ALL FIREPROOFING FOR ELECTRICAL PENETRATIONS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. 31. SYSTEM FEEDERS AND BRANCH CIRCUITS THAT PASS THROUGH ALTERED AREAS AND SERVE OTHER AREAS SHALL BE MAINTAINED. 32. PROVIDE NEW TYPED IDENTIFICATION DIRECTORY IN PANELBOARDS INDICATING CIRCUIT FUNCTION OR EQUIPMENT SERVED. LABEL ALL ELECTRICAL PANELS, DISCONNECT SWITCHES AND OTHER EQUIPMENT WITH ENGRAVED VINYL PLATES. NAMEPLATE LETTERING SHALL BE 1/4" MINIMUM. 33. DISCONNECT SWITCHES SHALL BE HEAVY DUTY (HD). SIDE OPERATED WITH INTERLOCKING COVER, G.E., SQUARE "D", CUTLER HAMMER OR SIEMENS OR EQUAL. 34. ALL WIRING (LOW VOLTAGE, TEL/DATA, FIRE ALARM, POWER BRANCH CIRCUIT) SHALL BE PLENUM RATED; NO EXCEPTIONS. NON-PLENUM RATED CABLES OF ANY KIND 35. PROVIDE UL LISTED MOLDABLE PUTTY PADS TO SEAL ANNULAR SPACES/PENETRATIONS AROUND ALL JUNCTION BOXES. GENERAL NOTES 1. ALL FLOOR, MASONRY WALLS AND STRUCTURAL CEILING PENETRATIONS SHALL BE SLEEVED. 2. PROVIDE FIRE/MOISTURE SEAL FOR WALL, FLOOR OR CEILING PENETRATIONS. 3. DO NOT LAY CABLES OR RACEWAY ON, OR SUPPORT FROM SUSPENDED CEILING OR PIPING AND DUCTWORK. 4. OUTLET BOXES SHALL BE MOUNTED FLUSH. CONDUIT SHALL BE RUN CONCEALED. WHERE WALLS ARE BLOCK, DEVICES AND WIRING SHALL BE SURFACE MOUNTED. PROVIDE WIREMOLD OR EQUAL TO SURFACE MOUNTED RACEWAY WITH FINISHED BOXES. 5. ALL WIRING WITHIN UTILITY CLOSETS MAY BE IN SURFACE MOUNTED CONDUIT. EMT MAY BE UTILIZED. 6. FLEXIBLE CONDUIT CONNECTIONS SHALL BE A MAXIMUM OF 6'-0". 7. MC TYPE CONDUCTOR WITH INTEGRAL GROUND WIRE MAY BE UTILIZED FOR POWER AND LIGHTING CIRCUITS. MC CABLE SHALL BE UTILIZED ONLY WHERE COMPLETELY CONCEALED. 8. STEEL OR FIRE-RATED ELECTRICAL BOXES (SWITCHES, OUTLETS, JUNCTION BOXES, ETC.) SHALL BE PROVIDED AND INSTALLED IN ALL FIRE RATED ASSEMBLIES AS IN ACCORDANCE WITH BUILDING AND ELECTRICAL CODES, UL LISTED MOLDABLE PUTTY PADS OR FIREBLOCK/SPRAY FOAM INSULATE SHALL BE USED TO SEAL ALL ANNULAR SPACES/PENETRATIONS AROUND OUTLET BOXES. FIRE RATED ASSEMBLIES INCLUDE EXTERIOR WALLS, FIRE-RATED WALLS, FLOOR/CEILING ASSEMBLIES RECESSED ELECTRICAL ENCLOSURES SUCH AS BUT NOT LIMITED TO; PANELBOARDS, LOW VOLTAGE MEDIA CENTERS, ETC. SHALL BE PROVIDED WITH FIRE-RATED BOXES WHERE INSTALLED IN FIRE-RESISTANCE-RATED ASSEMBLIES. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES. 1. ALL CONDUIT, WIRING AND ELECTRICAL EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST STANDARDS OF THE NATIONAL & STATE ELECTRICAL CODES AND ANY APPLICABLE LOCAL REGULATIONS. 2. ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD, EXCEPT WHERE SPECIFIC DIMENSIONS AND DETAILS ARE SHOWN. ALL CONDUIT RUNS SHALL BE RIGIDLY SUPPORTED. 3. NO CONDUIT SMALLER THAN 3/4 INCH ELECTRICAL TRADE SIZE SHALL BE USED, UNLESS SPECIFICALLY CALLED FOR ON THE DRAWINGS. 4. PERFORM WORK AND PROVIDE MATERIALS AND EQUIPMENT TO MAKE INSTALLATION COMPLETE IN EVERY DETAIL UNDER THIS CONTRACT WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS. 5. WIRING DEVICES SHALL BE TAMPER RESISTANT GRADE, 20 AMP, WITH SMOOTH NYLON DEVICE PLATES AS MANUFACTURED BY HUBBELL, OR EQUAL. COLOR TO MATCH EXISTING OR AS APPROVED BY ARCHITECT. 6. ALL 15 AND 20 AMP, 125 AND 250 VOLT WIRING DEVICES INSTALLED WITHIN COMMERCIAL KITCHEN AND BAR AREAS SHALL BE PROVIDED WITH WEATHERPROOF IN-USE CLEAR COVER AS MANUFACTURED BY HUBBELL, OR EQUAL: HUBBELL No. MM410C. 7. CONDUCTORS AND CABLE SHALL BE MINIMUM #12 AWG, 600 VOLT, COPPER WITH TYPE THHN/THWN INSULATION. PROVIDE SEPARATE GREEN GROUND IN ALL FEEDERS. WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED, #10 AWG AND SMALLER SHALL BE SOLID. COLOR CODE CONDUCTORS BLACK, RED, BLUE, WITH WHITE NEUTRAL AND GREEN GROUND EXCEPT AS NOTED FOR 120 VOLT 8. MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED: CONVENIENCE RECEPTACLE (GENERAL), 1'-6" FROM FLOOR TO CENTERLINE. CONVENIENCE RECEPTACLE (OFFICE), 1'-6" FROM FLOOR TO CENTERLINE. c.) TELEPHONE OUTLETS, 1'-6" FROM FLOOR TO CENTERLINE. 9. PROVIDE SEPARATE HOT, GROUND AND NEUTRAL CONDUCTOR FOR ALL CIRCUITS CONNECTED TO ARC-FAULT CIRCUIT BREAKERS.

PANELBOARD AND TERMINAL CABINET

120/208VOLT LIGHTING OR POWER PANEL, SURFACE MOUNTED

MOTOR AND CONTROLS

MOTOR, NUMERAL INDICATES HORSEPOWER

INTERMEDIATE METALLIC CONDUIT

MASSACHUSETTS ELECTRICAL CODE

JUNCTION BOX

KII OWATT

LIGHTING

POWER

KILOVOLT-AMPERE

MAIN CIRCUIT BREAKER

MOTOR CONTROL CENTER

PLUMBING CONTRACTOR

RIGID STEEL CONDUIT

SQUARE FOOT

SOLID NEUTRAL

SWITCHBOARD

VOLT-AMPERE

WEATHERPROOF

TYPICAL

VOLTS

REVOLUTIONS PER MINUTE

ROOT MEAN SQUARE VALUE

SHUT TRIP CIRCUIT BREAKER

VARIABLE FREQUENCY DRIVE

NATIONAL ELECTRICAL CODE

MAIN LUGS ONLY

MOUNTING

NON-SYSTEM

NUMBER

NOT TO SCALE

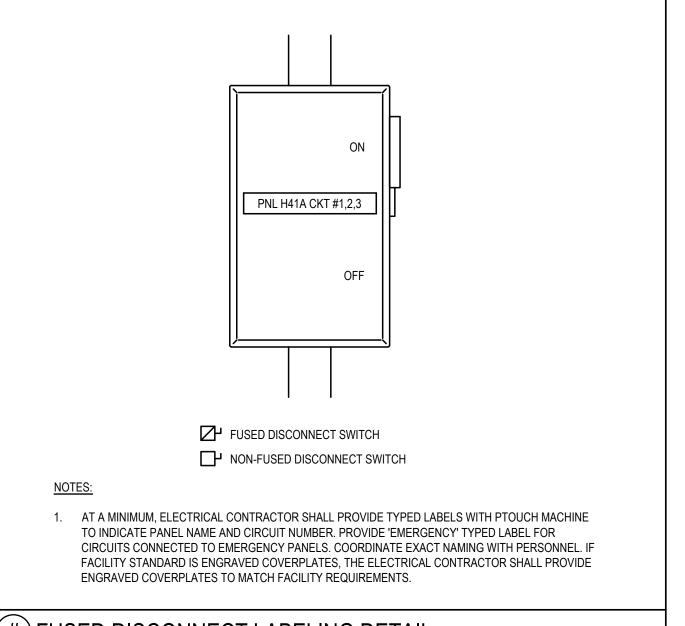
MOUNTED

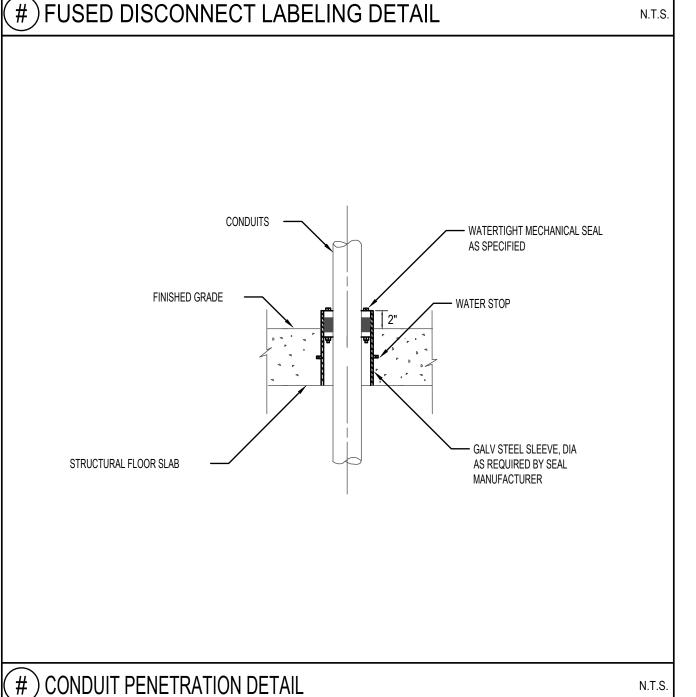
DISCONNECT SWITCH, NON-FUSIBLE TYPE, RATED 30A/3P, IN NEMA TYPE "1" ENCLOSURE, UNLESS OTHERWISE NOTED. "3R" DENOTES NEMA TYPE ENCLOSURE

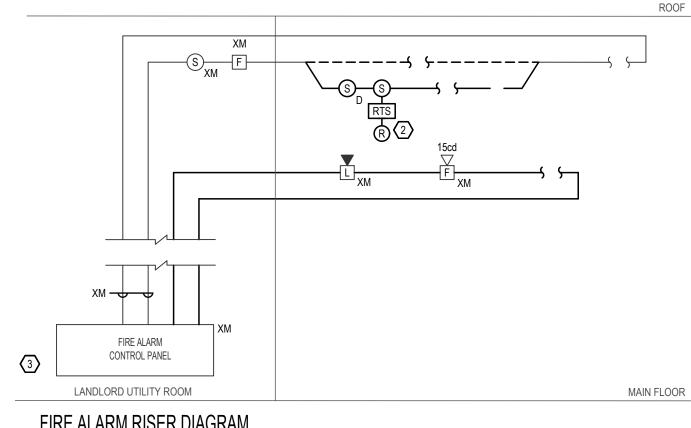
DISCONNECT SWITCH, FUSED TYPE, RATED 30A, 20A FUSE, 3 POLE IN NEMA TYPE "1" ENCLOSURE, UNLESS OTHERWISE NOTED

EXISTING EQUIPMENT DESIGNATIONS

- EXISTING TO BE REMOVED. REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS.
- EXISTING TO REMAIN.
- EXISTING EQUIPMENT TO BE REPLACED WITH NEW. CONNECT NEW EQUIPMENT TO EXISTING CIRCUIT.
- EXISTING EQUIPMENT TO BE RELOCATED. JUNCTION AND EXTEND EXISTING CONDUIT AND CONDUCTORS.
- NEW LOCATION FOR EXISTING EQUIPMENT. JUNCTION AND EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.







FIRE ALARM RISER DIAGRAM

FIRE ALARM RISER DIAGRAM NOTES

- 1. RISER DIAGRAM DOES NOT SHOW ENTIRE SYSTEM. REFER TO FLOOR PLANS FOR EXACT QUANTITIES AND LOCATIONS OF ALL SYSTEM DEVICES.
- 2. TO AUXILIARY CONTACTS IN RESPECTIVE AIR-HANDLING UNIT STARTER FOR UNIT SHUTDOWN ON ALARM. DUCT SMOKE DETECTOR SHALL BE PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. DUCT SMOKE DETECTORS SHALL BE INSTALLED AS IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE: SMOKE DETECTORS SHALL BE INSTALLED IN RETURN AIR SYSTEMS WITH A DESIGN CAPACITY GREATER THAN 2,000 CFM, IN
- THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS, EXHAUST AIR CONNECTIONS, OUTDOOR AIR CONNECTIONS. OR DECONTAMINATION EQUIPMENT AND APPLIANCES. WHERE RETURN AIR RISERS SERVE TWO OR MORE STORIES AND SERVE ANY PORTION OF A RETURN AIR SYSTEM HAVING A
- DESIGN CAPACITY GREATER THAN 15,000 CFM, SMOKE DETECTORS SHALL BE INSTALLED AT EACH STORY. SUCH SMOKE DETECTORS SHALL BE LOCATED UPSTREAM OF THE CONNECTION BETWEEN THE RETURN AIR RISER AND ANY AIR DUCTS
- SMOKE DETECTORS SHALL BE INSTALLED IN THE SUPPLY AIR SYSTEM FOR ALL MAKE-UP AIR UNITS WITH A DESIGN CAPACITY GREATER THAN 2,000 CFM AS IN ACCORDANCE WITH NFPA 90A.
- 3 REPROGRAM EXISTING PANEL FOR NEW DEVICES

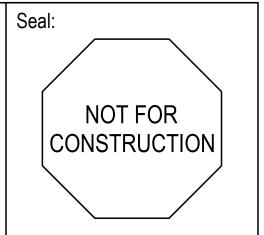
			ļ	MECH	HANI	CAL	EQUIPMENT	COORD	INATION SCH	EDU	ILE						
EQUIP.	EQUIPMENT DESCRIPTION	НР	MCA	kVA	VOLT	PHASE	PANEL CIRCUIT No.	CIRCUIT	FEEDER	S _M	\boxtimes	5	Ţ	~	WP	(S)D	SEE
TAG								BREAKER		- IVI	تعر			- 0		Ob	NOTE
							N	EW									
ERV-1	ENERGY RECOVERY UNIT		45.6	30.33	480	3	REFER TO HPM1	50A/3P	4#8,1#10G-3/4"C			✓	60AF/50AT	✓		✓	1,5
ERV-2	ENERGY RECOVERY UNIT		32.7	21.75	480	3	REFER TO HPM1	40A/3P	4#8,1#10G-¾"C			✓	60AF/40AT	✓		✓	1,5
																	1,5

MECHANICAL SCHEDULE NOTES:

- 1. DISCONNECT SWITCH PROVIDED WITH EQUIPMENT, REFER TO MECHANICAL SCHEDULES FOR DETAILS
- 2. CONTROLLER PROVIDED WITH EQUIPMENT. ELECTRICAL CONTRACTOR SHALL WRE BRANCH CIRCUIT THROUGH CONTROLLER MOUNTED BY MECHANICAL CONTRACTOR
- 3. VFD PROVIDED WITH EQUIPMENT, ELECTRICAL CONTRACTOR SHALL WIRE BRANCH CIRCUIT THROUGH VFD MOUNTED BY MECHANICAL CONTRACTOR
- 4. STARTER PROVIDED WITH EQUIPMENT, ELECTRICAL CONTRACTOR SHALL WIRE BRANCH CIRCUIT THROUGH STARTER MOUNTED BY MECHANICAL CONTRACTOR
- 5. CONDENSATE PUMP PROVIDED WITH EQUIPMENT, REFER TO FLOOR PLANS FOR DETAILS
- 6. DUCT MOUNTED SMOKE DETECTOR PROVIDED BY ELECTRICAL CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR
- 7. DUCT MOUNTED CARBON DIOXIDE DETECTOR PROVIDED BY ELECTRICAL CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR

- 1. EQUIPMENT LOCATIONS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE LOCATIONS ONLY. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATIONS.
- 2. REFER TO MECHANICAL SCHEDULES FOR ADDITIONAL INFORMATION AND DETAILS
- 3. EXISTING HEAT RECOVERY UNIT SHALL BE REMOVED AND REPLACED WITH NEW VFD/DISCONNECTS. INSTALL VFD/DISCONNECTS SHALL PROVIDE ALL POWER WIRING CONNECTIONS.

30A 15A 15A	 	NO. 1 3 5 7 9 11 13 15 17	0.90 1.40	2.80 0.90	2.80 0.90	1.90 0.90	1.90 0.90	1.90	NO. 2 4 6	 		HRU - 15
15A 15A	 	3 5 7 9 11 13	0.90					1.90	4 6		20A	HRU - 15
15A 15A	 	5 7 9 11 13				0.90		1.90	6		20A	HRU - 15
15A	 	7 9 11 13 15		0.90		0.90	0.00	1.90				
15A	 	9 11 13 15		0.90	0.90	0.90	0.00			-		
15A	 	11 13 15	1.40	0.90	0.90			ſ	8		454	LIDIL 00
		13 15	1.40	1	0 90	-	0.90	0.90	10		- IOA	HRU - 20
		15	1.40		0.00	1.40	1	0.90	14			
				1.40		1.40	1.40		16		15A	HRU - 4
15A			1	1.10	1.40	1	1.10	1.40	18	-	10/1	
15A		19	1.40	1 '		0.60	1		20	_		
		21		1.40			0.60		22		15A	EF - 3
		23	_		1.40			0.60	24	-		
		25	10.10] '		7.25]		26			
50A		27		10.10			7.25		28	-	40A	ERV - 2
		29			10.10			7.25	30			
		31	1.60			1.90			32			
20A		33		1.60			1.90		34	<u> </u>	20A	HRU - 21
		35		_	1.60		1	1.90	36			
454			0.00	0.00		0.00	0.00	ſ			004	ODADE
15A			_	0.00	0.00		0.00	0.00		-	20A	SPARE
		41			0.00			0.00	42			
				TOTA	L LOA	D 96.45	kVA					NOTES: PROVIDE WITH FEED-THRU LUGS
												BOLD =
1	5A		37 5A 39	37 0.00	37 0.00 39 0.00 41	37 0.00 39 0.00 41 0.00 TOTAL LOA	37 0.00 0.00 39 0.00 0.00	37 0.00 0.00 0.00 0.00 0.00	15A	5A	37 0.00 0.00 38 15A 39 0.00 0.00 0.00 40 17	37 0.00 0.00 38 20A 41 0.00 0.00 42 TOTAL LOAD 96.45 kVA





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Client:

Harvard Public Schools Harvard, MA 01451

Submission: CD SET

07/23/21

Revision:

Project:

00 at C Replacement High Bromfield

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21213.00 Project No.: Drawn By: Checked By: Scale: As Noted

ELECTRICAL

Drawing No.

